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08/187,662 01/26/94 ALFIERI

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RICHEY, M EXAMINER

B3M1/0307

ART UNIT	PAPER NUMBER
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2316

DATE MAILED: 03/07/95

ROBERT L. DULANEY
MS A212
DATA GENERAL CORPORATION
4400 COMPUTER DRIVE
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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-7 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-7 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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Part III DETAILED ACTION

Drawings

1. The drawings are objected to for the reasons set forth in the Notice of Draftsperson's Patent Drawing Review. Please label 206 and 204 in fig. 2 as a process and kernel for clarity. Correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the claimed invention.

The central idea of the invention is to promote/demote system/kernel calls. Since this feature is new, the specification should provide an adequate written description of how this is accomplished.

3. Claims 1 - 7 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

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4. Claims 1 - 7 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

i. Claim 1 is rejected as vague. "monitoring for a complication" is vague. The claim is vague regarding which component causes the complication. It could be the system or the calls.

ii. Claim 1 is rejected as incomplete. There is no clear path to follow when the system is absent of complications.

iii. Claim 1 is rejected as vague. "handling the complication" is vague regarding what is done to the complication. e.g. handling does not necessarily imply resolving the complication.

iv. Claim 2 is rejected as confusing. Monitoring a suspended state is unrelated to handling the complication. The claim is confusing because it is not clear if the suspended state is a result of a resolution of the complication.

v. Claim 3 is rejected because "the step" (both occurrences) lacks proper antecedent basis.

vi. Claim 4 is rejected as confusing. The redundancy of the two steps is confusing. Storing parameters, which could originate in the function call, is redundant since they must have been previously stored in the system for use by the kernel.

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"initiating the system call" is redundant since promotion to a system call implies that the system call is initiated.

vii. Claim 5 is rejected because "the phase" lacks proper antecedent basis. The use of LWP renders the broadest interpretation of the claim indefinite since the acronym is not defined in the claim.

viii. Claim 5 is rejected as confusing. No previous LWP has occurred in the claim. Therefore a reference to this previous LWP is confusing.

ix. Claim 6 is rejected as confusing. The redundancy created by initiating a system call is confusing with the notion that a promotion to a system call initiates the call.

x. Claims 2 - 7 are rejected because they depend from a rejected claim.

5. Claim 7 is rejected under 35 U.S.C. § 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim. A claim limitation to releasing spin locks is not further limiting to a claim involving execution of a kernel function call.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or

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on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 - 4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Deitel.

i. Per claim 1:

Deitel teaches monitoring for a complication as utilizing the operating system code to indicate an interruption (or complication), page 62. Deitel teaches promoting from the kernel function call to the system function call as the nuclei (or kernel) are designed to do the "bare minimum amount of processing that is possible on each interrupt, and then to pass the remaining processing of each interrupt to an appropriate system process that can operate while the nucleus is enabled for further interrupts" (page 61, 62). Deitel teaches handling the complication in the system call as "an appropriate system process" operates on the amount of processing.

ii. Per claim 2:

Deitel teaches monitoring for a suspended state in the system call as the nucleus functions to suspend and resume processing (page 62). Deitel teaches demoting from the system call to the kernel call as resuming the functions of the kernel.

iii. Per claim 3:

Deitel teaches assigning a stack to the system call and releasing the stack as creating and destroying the stack of a process created by a system call (paragraphs 4 and 5, page 575).

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iv. Per claim 4:

The rejection above in section i applies since the interrupted parameters must be stored in the computer in order for the system call to be initiated.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

9. Claims 5 - 7 are rejected under 35 U.S.C. § 103 as being unpatentable over Deitel.

i. Per claims 5 and 6:

Deitel teaches monitoring for a complication as utilizing the operating system code to indicate an interruption (or complication), page 62. Deitel teaches promoting from the kernel function call to the system function call as the nuclei (or kernel) are designed to do the "bare minimum amount of processing

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that is possible on each interrupt, and then to pass the remaining processing of each interrupt to an appropriate system process that can operate while the nucleus is enabled for further interrupts" (page 61, 62). Deitel teaches handling the complication in the system call as "an appropriate system process" operates on the amount of processing. However, Deitel does not teach passing an identifier specifying the phase of the LWP execution. One of ordinary skill in the art realizes that in order for the resumption of a process to take place after suspension, information regarding the state (or phase) of the process prior to suspension must be passed to the interrupt handler so that the resumption of a process can occur efficiently without duplication of previous process events (or phases). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the resumption of a process occur at the same point prior to the interruption because this allows efficient execution of the process without duplicating or omitting any process events (or phases).

ii. Per claim 7:

Deitel teaches monitoring for a complication as utilizing the operating system code to indicate an interrupt (complication), page 62. Deitel teaches promoting from the kernel function call to the system function call as the nuclei (or kernel) are designed to do the "bare minimum amount of

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processing that is possible on each interrupt, and then to pass the remaining processing of each interrupt to an appropriate system process that can operate while the nucleus is enabled for further interrupts" (page 61, 62). Deitel teaches handling the complication in the system call as "an appropriate system process" operates on the amount of processing. However, Deitel does not teach releasing a spin lock. One of ordinary skill in the art realizes that kernel function for allocation and dislocation of storage (page 62) utilizes locks to prevent competing process from interfering with each other's allocation of storage. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to lock a process to an area of memory because this forbids other processes from erroneously accessing this memory.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

i. 5,109,515 4/28/92 Laggis et al 395/725

"User And Application Program Transparent Resource Sharing Multiple Computer Interface Architecture With Kernel Process Level Transfer Of User Requested Services".

ii. 5,291,608 3/1/94 Flurry 395/725

"Display Adapter Event Handler With Rendering Context Manager".

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iii. 5,361,359 11/1/94 Tajalli et al 395/700

"System and Method For Controlling The Use Of A Computer".

iv. 5,379,432 1/3/95 Orton et al 395/700

"Object-Oriented Interface For A Procedural Operating System".

v. 5,390,329 2/14/95 Gaertner et al 395/650

"Responding To Service Requests Using Minimal System-Side Context In A Multiprocessor Environment".

vi. "Message-based Microkernel for Real-time System" by Seong Rak Rim et al, IEEE 1992.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael T. Richey whose telephone number is (703) 305-9669.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

MT

Michael T. Richey
3/2/95

[Signature]
KEVIN A. KRIESS
PRIMARY EXAMINER
GROUP 2300